EXHIBIT 4

UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK

AMERICAN BROADCASTING COMPANIES, INC., DISNEY ENTERPRISES, INC., CBS BROADCASTING, INC., CBS STUDIOS INC., NBCUNIVERSAL MEDIA, LLC, NBC STUDIOS, LLC, UNIVERSAL NETWORK TELEVISION, LLC, TELEMUNDO NETWORK GROUP LLC, and WNJU-TV BROADCASTING LLC, Plaintiffs/Counterclaim Defendants, v. AEREO, INC. Defendant/Counterclaim Plaintiff.	Civil Action No. 12-CV-1540 (AJN)
WNET, THIRTEEN, FOX TELEVISION STATIONS, INC., TWENTIETH CENTURY FOX FILM CORPORATION, WPIX, INC., UNIVISION TELEVISION GROUP, INC., THE UNIVISION NETWORK LIMITED PARTNERSHIP, and PUBLIC BROADCASTING SERVICE, Plaintiffs/Counterclaim Defendants, v. AEREO, INC. Defendant/Counterclaim Plaintiff.	Civil Action No. 12-CV-1543 (AJN)

DECLARATION OF JOSEPH LIPOWSKI

development, operation, and maintenance of the hardware and much of the software that allows the Aereo system to function.

5. In general terms, the Aereo system is a technology platform that enables users to make recordings of over-the-air television broadcasts accessed through an individually assigned antenna. Essentially, it provides consumers with the ability to remotely locate their antenna and digital video recorder ("DVR"). The recordings, which are accessible only to the user who made them, are stored on a remote-storage DVR ("RS-DVR"). While the system is certainly electronically complicated (as is a conventional DVR or any computer component), it is designed to be, and is, simple from a consumer's point of view. When a consumer pushes play on a conventional DVR, there is complex machinery and software that automatically responds to that command. The same is true with the Aereo system.

6. The consumer accesses Aereo over the Internet through an HTML browser interface using a traditional computer or laptop, tablet, or mobile phone, by going to Aereo.com. A user may choose to enter the "Watch" mode and begin her playback and display of the recording shortly after the broadcast data is recorded or the user may choose to save her recording until she decides to play it back at a later time (which I will call the "Record" mode). However, from a technical and practical perspective, the "Watch" and "Record" modes operate in much the same way. In both modes, a user can elect to play back her recording shortly after the broadcast data is recorded, and a user can save the recorded data for later viewing.[1]

[1] The only practical differences between the "Watch" mode and the "Record" mode are that (i) for the Safari browser on a Mac and in the "Watch" mode, the playback begins automatically, within a short period of time after the recording has begun, while in the "record" mode, the playback does not occur until a user presses "play"; and (ii) in the "Watch" mode, a recording is not saved once the playback is completed unless the user chooses to save it, while in the "record" mode the recording is saved until the user chooses to delete it or that user's RS-DVR runs out of space. If the user is using an iOS device such as an iPad or iPhone, only the second difference above applies.

7. The similarities between the "Record" and "Watch" modes in Aereo's system may be understood by considering a conventional DVR. Using a conventional DVR, the user can schedule a recording and have the option of playing it back either shortly after it is broadcast, or at a later time—that is Aereo's "Record" mode. Using a conventional DVR, the user also can Watch near "live" television and pause or rewind it, and then save the recording of what has been watched "live" by pressing "Record" before changing the channel. The user can do this because what is being watched is not the contemporaneous broadcast stream, but a *recording* of the broadcast stream that is being played back—that is Aereo's "Watch" mode. In short, the functionality of the Aereo system gives consumers the same experience as an in-home DVR connected to a home antenna. The difference is that with the Aereo system, the user's antenna and DVR are located remotely.

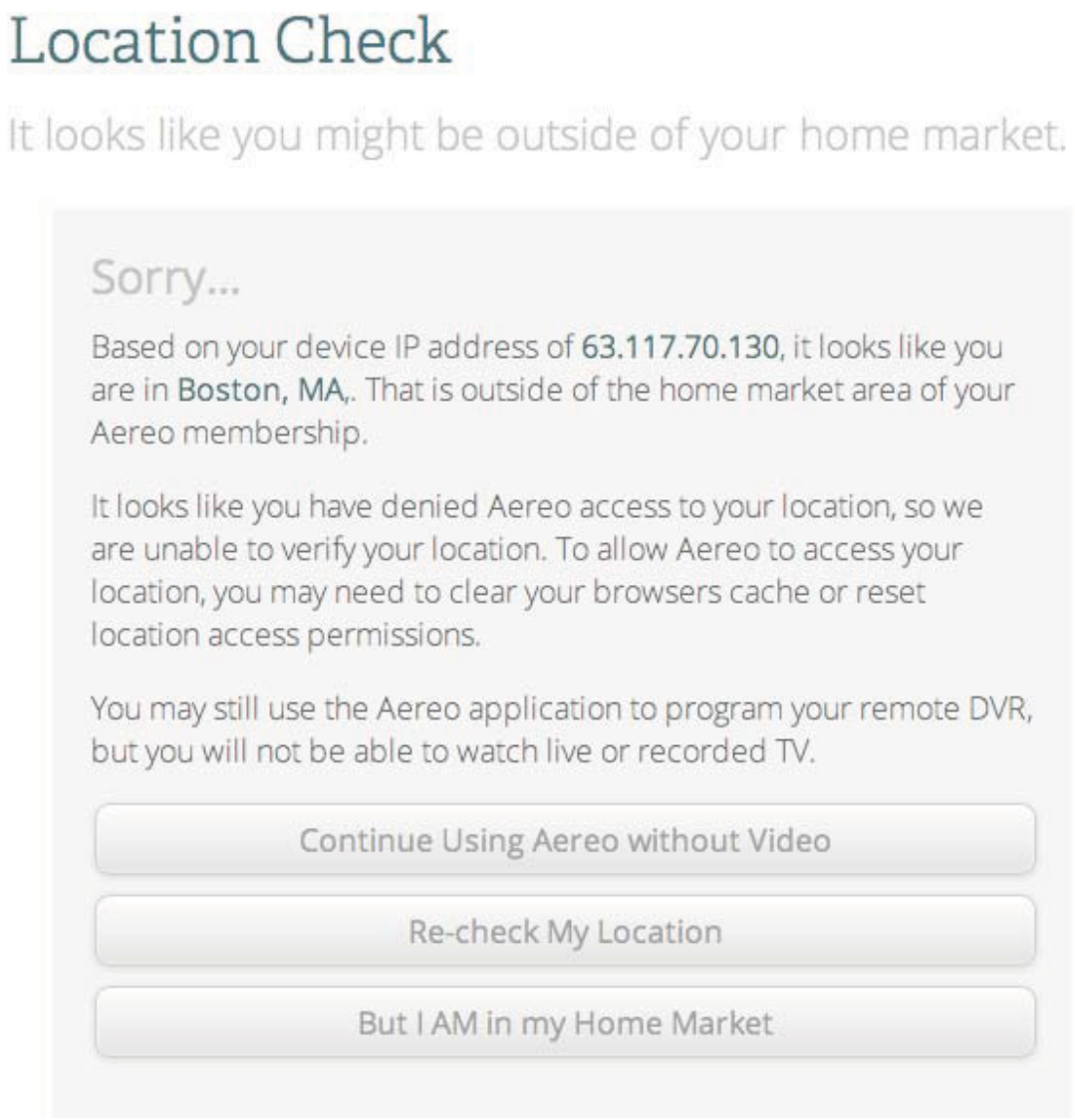
The Details of the Aereo System

8. The Aereo system consists of individual antennas, tuners, demodulators, transcoders, a series of hard drives, and computer servers. These elements and the interactions among them are controlled by the user but managed by computer software. At the user end, there is a website interface that the Aereo customer uses to control this machinery. The right side of the website interface displays a channel and program guide, and a menu of options for scheduling a future recording or for recording a program that is currently airing and then playing it back shortly after it is broadcast.

9. The Aereo system is only available to users physically present in the New York City media market. Aereo confirms this in several ways. As a threshold matter, the user's credit card information is cross-checked with the physical billing address associated with the card holder. In addition, when the user accesses the Aereo website the user's Internet Protocol (IP)

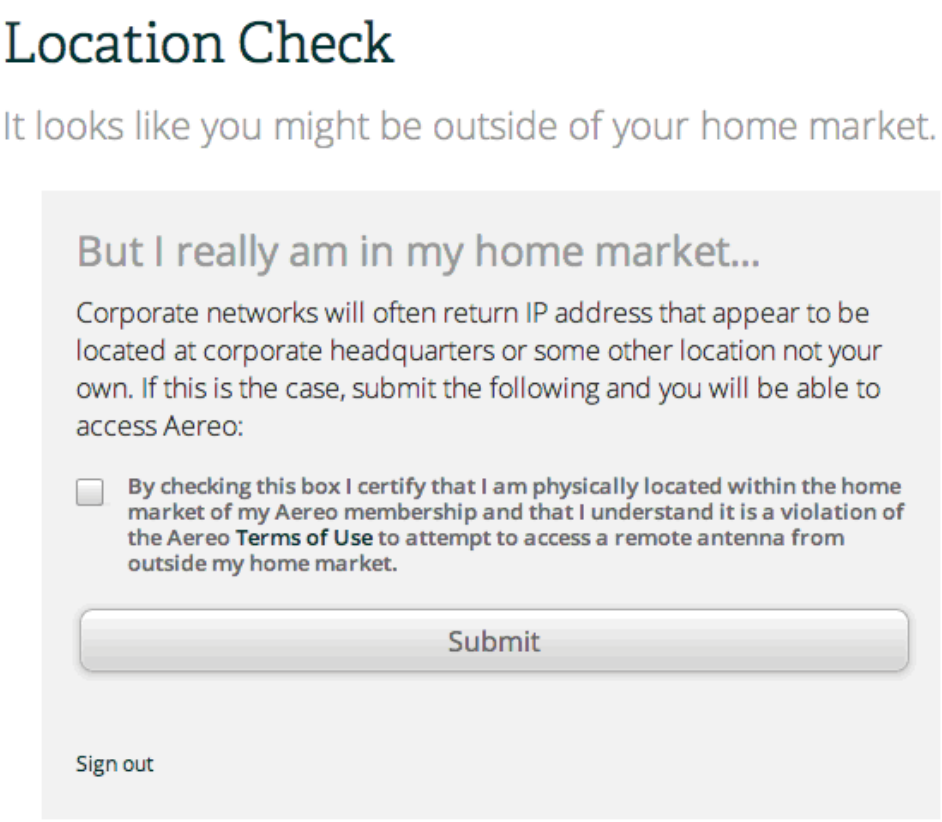
address is checked using a third-party location database to determine the location of the user. If the user fails the first geo-location check by IP address, the user is offered a further check using the device browser's geo-location features which may include GPS function, cell tower triangulation, crowd sourced WiFi hotspot and a proprietary browser IP look-up.

10. If the user fails the second check or chooses to dis-allow the check, then she is presented with the following pop-up screen on the Aereo website interface:



This screen provides the three choices noted.

11. If the user elects the third option above, that is, they affirm "But I AM in my Home Market," the user is prompted with another pop-up screen before she can proceed:



The user is not allowed to continue unless she affirmatively states, again, that she is located in the home market and expressly agrees to abide by the Aereo Terms of Use. A true and correct and copy of the Aereo Terms of Use, available at https://aereo.com/terms, is attached hereto as Exhibit 1.[2]

12. Once a user selects a program from the guide and chooses to record that program in either "Record" mode or "Watch" mode, the Aereo system responds automatically. There is no human intervention between the user pressing the "Record" or "Watch" button on the user interface, and the making of the recording. Similarly, once the customer initiates playback by

[2] The two accounts provided to Plaintiffs in this case had the geo-location verification disabled, per the Court's Order allowing plaintiffs account access without geographic limitation.

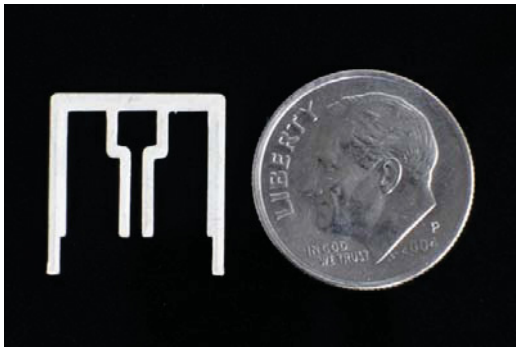
pressing "Play" or "Watch" in either mode, the system acts automatically and without human intervention.

14. All of the components in the Aereo system respond automatically to user commands. No broadcasts are accessed by the individual antennas and no recordings are made unless and until a user initiates a recording of a specific broadcast. After an Aereo customer initiates a recording by pressing "Record" or "Watch,"[3] the Aereo system begins the automatic process of capturing the requested program by tuning an antenna that is either permanently

[3] If the user presses "Watch" or "Record" for a show that is then airing, the system begins that recording. If "Record" is selected for a show to air in the future, the system begins recording when the show airs.

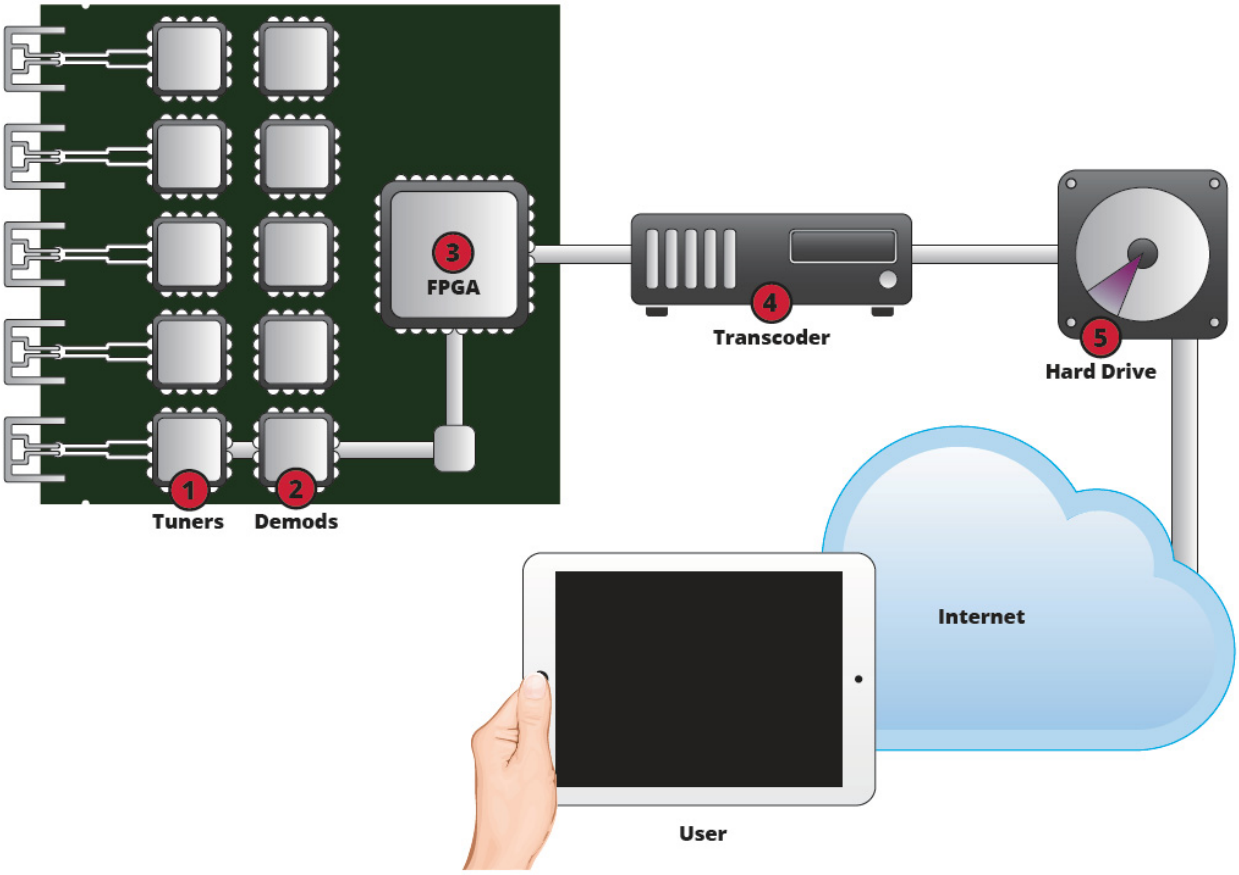
assigned to that user or assigned to that user for the duration of the recording. The Aereo antennas are, at rest, tuned to broadcast frequencies which are unused in the New York market, and thus do not ingest any in-market broadcast signals, until an Aereo user requests a recording and an antenna assigned to that user is tuned to the corresponding frequency pursuant to the user's request.

15. As shown below, each Aereo antenna element is relatively small, about the size of a dime.



[redacted]

[redacted]



[redacted] Virtually all the steps described below would be performed by a

[redacted]

34. A traditional television antenna ingests all channels and the selection of which channel among them to be viewed is made by the television receiver. In contrast, the Aereo antenna ingests a single particular channel at the user's direction.

[redacted]

[redacted]

41. Next, the signal is sent to the transcoder (indicated as (4) in the block diagram above). The transcoder re-formats and compresses the information so that it is more easily recorded and is more compatible with the member's ability to pull the stream through the Internet. Through this process, too (and throughout the entire Aereo system), each user's signal remains unique to that user and is exclusively associated with that user.

42. Once transcoded, the signal is recorded to a hard drive (indicated as (5) in the block diagram above), where it is identified exclusively with a particular user and indexed so it may be later retrieved and played back. The user's unique recording is saved to the hard drive until the user requests deletion or until the user runs out of her allocated hard drive space, in which case older recordings are deleted to make space for newer recordings.[4]

43. Each of the foregoing steps takes place for every recording made by every user—even if two or more users set a recording for the same television program. In other words, if one user chooses to record "American Idol," that user's recording of "American Idol" is unique and distinct from another user's recording of the same program. Each user has his or her own personal, unique copy, which cannot be accessed by other users, and which contains any unique impairments or artifacts that may exist from the capture and processing of that user's stream. If one user's recording fails then that user will not have a recording of the program. In addition, the failure of one user's recording will not affect another user's recording of the same program (or any other program).

[4] During this litigation, in response to a request from counsel, Aereo located and copied two individual user's copies of the same program and provided the copies to counsel. The program was *Twiggy London Fashions*, broadcast on HSN at 8:00 p.m. on March 27, 2012. Both recordings were set to commence at the beginning of the program. One recording was scheduled in my Aereo account, and the other was scheduled in Mr. Hosp's Aereo account. I understand that the files were analyzed to determine whether they were unique and that the results are addressed in the Expert Report of Paul Horowitz, dated April 17, 2012.

[redacted]

45. The user can only request the playback of their own recordings. The playback comes from the hard drive over a Secure HTTP protocol ("HTTPS"). HTTPS is an industry-standard secure transmission protocol used by banks, financial institutions, and others.

46. When the user receives the transmission on her device, the user views the playback of the recording through a media player in the user's web-browser. The transmission is not in the form of a "download" that is saved locally. The transmission includes closed caption information, which the user may also display in the browser by selecting it.

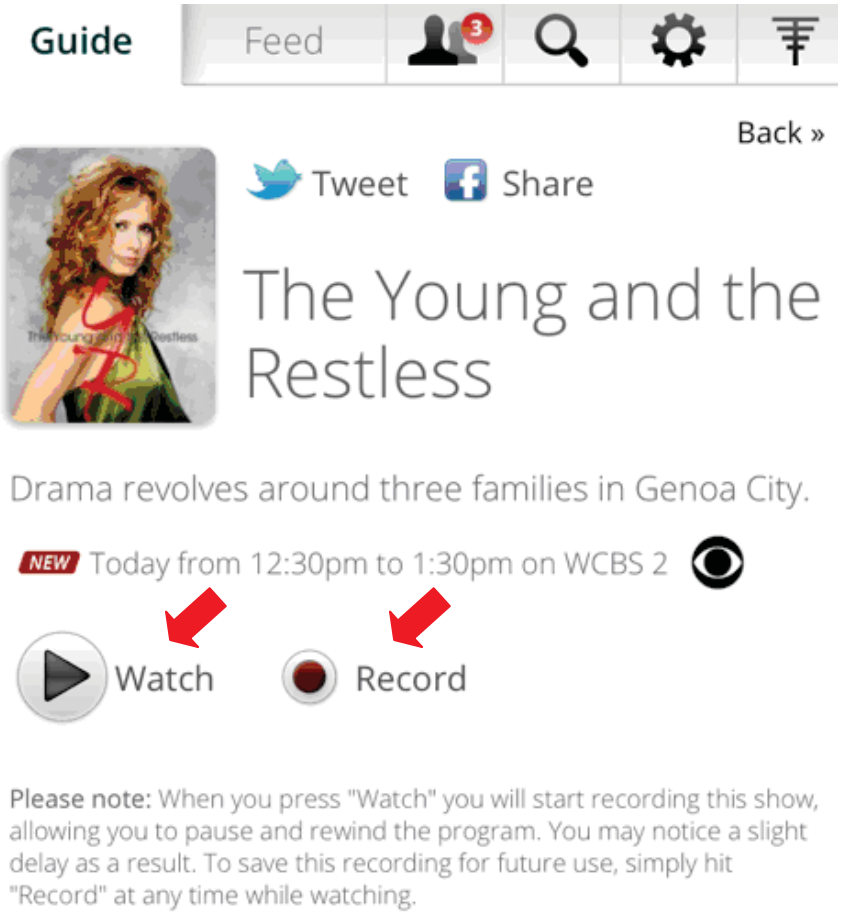
47. Each user's data stream remains unique to her throughout the entire Aereo system from antenna to personal viewing device. Once the data requested by a user enters the Aereo system, that data is identified with the user ID assigned to that user, and it is not mixed with any other user's content. The data identifier also functions to ensure that only the user who made a particular recording has access to that recording.

How a User Makes a Recording When the Show is Playing– the "Watch" Mode

48. The steps described above occur in both the "Record" and "Watch" modes. The difference between the two is that in the "Record" mode, the playback does not begin automatically, and the recording is automatically saved, even after playback has ended, until the user requests deletion.

49. If the user selects a program that is being broadcast at the time of the request, the user has the option of two buttons on the Aereo interface, "Watch" or "Record." Below is a

screenshot (also shown above in paragraph 31) of what the user sees when she signs on to the Aereo user interface and selects a program that is currently playing:



50. If the user presses "Watch", the Aereo system automatically executes the exact same steps described above for the "Record" mode: [redacted] Then, at that point, if the user has requested the recording through the "Watch" mode, playback is initiated shortly after recording has begun if the user is accessing Aereo through the Safari browser on a Mac, or, if the user is using an iPad or iPhone, the user is

presented with a "play" button. Once the user presses the "play" button, the playback is initiated.

51. Specifically, in "Watch" mode, the hard drive "ingests" and initially writes approximately 7-9 seconds of recording to the hard drive. Playback occurs from the recording. The user is *not* watching directly from the "live" program stream, but from the copy on the hard drive, *after* it has been recorded. As a result, the user is watching a part of the program "behind" what is presently being recorded. The delay between when the data is written to the hard drive, and when the programming contained in that data is played back by the user, can vary. It cannot be less than 6 seconds, but it can be much longer.

[redacted]

53. The recording made in the "Watch" mode is a true, fixed recording made by the user in the same way as using a home DVR; it is not a "buffer" that is ephemeral or overwritten by later content as it records. Instead, each recording is maintained until the user has finished watching the program by pressing stop or the program has ended and no further recording is being made, or if the user pauses the program and takes no further action, the recording is maintained until 2 hours have elapsed since the end of the program, at which time the program is deleted. While the playback is active, the user can pause the recording at any time, and the user can rewind the recording to any point beginning from when the recording was started. From the moment the user presses the "Watch" button to when the user finishes watching the recorded program or the user tunes away, the entire unique recording exists on the hard drive. There is no fixed length such as a first-in-first-out (FIFO) delay buffer might have.

54. The "Watch" recording can also be saved on the hard drive beyond the duration of the show, just like a recording made in "Record" mode: that is, if the user decides to save the recording that is made through "Watch" mode, she can press the "Record" button while the program is still being played back and the software merely changes the flag instructing the program control to "save" rather than "delete" at the end of the program Thus, a user can create a recording of an entire program that is saved until the user deletes it by either (i) pressing "Record" and scheduling a recording of that program, or (ii) selecting "Watch" when the program begins, and then pressing "Record" before the playback of the recording has finished.

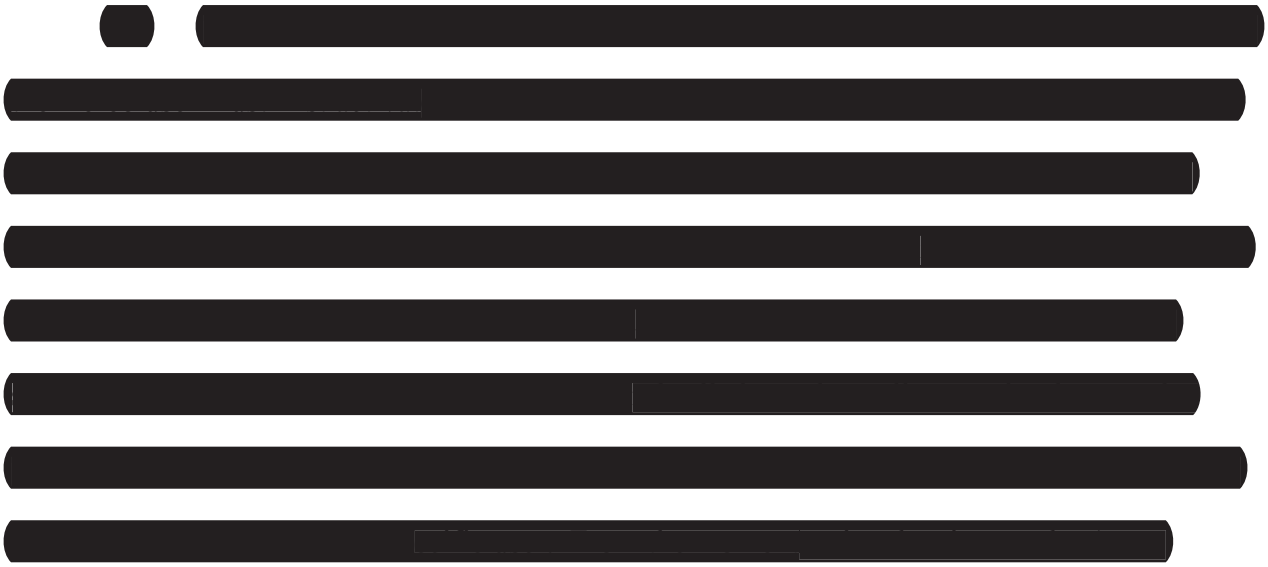
55. The "Watch" mode is designed to be identical to how consumers use conventional DVRs to watch "live" television. The recording is merely saved on a remote DVR, rather than on a DVR in the consumer's living room, and is played back from that same remote recording.

56. The "Watch" mode recording, like the "Record" mode recording, is unique to the user who makes it. If two users choose to "Watch" rather than "Record" a currently broadcasting program, each user will make a unique recording that is only accessible to that user, and each user will and can only see the playback of his or her own unique copy. [redacted] Similarly, if one "Watch" user chooses to save her unique recording before the playback is completed, and the other "Watch" user does not save her individual recording of the program, the second user will not be able to access a recording of that program.

57. The fact that each user makes a copy in connection with the "Watch" mode and is watching a recording, rather than a live contemporaneous stream, is disclosed in the Aereo member Frequently Asked Questions ("FAQs") and also on the user interface. A copy of the "What happens when I tune to a live program?" FAQ, available at http://support.aereo.com/customer/portal/articles/446000-what-happens-when-i-tune-to-a-live-program-, is attached as Exhibit 3. When a user selects a program that is currently broadcasting from the user guide, the following message appears immediately below the "Record" and "Watch" buttons:

13). I understand that the data from my tests at 470 Vanderbilt have been produced in this litigation, in a document labeled AEREO0037825. Other data from tests conducted by Aereo also show that when the signal strength of a single antenna is compared to that of antennas in the production board, the signal in the antenna on the production board (i.e. those antennas in proximity to other antennas) typically further *degrades*, as compared to the signal strength of a single antenna, when all of the antennas on the board are tuned to the same channel.

64. I also understand that Plaintiffs have suggested that the Aereo antennas located on the board somehow act as a "community antenna." My understanding of a "community antenna" is that conceptually it is a single antenna that, by design, receives and ingests all frequencies at the feed point simultaneously, i.e. in a broadband manner. The community antenna then transmits all possible channels to all users at all times, without a prior request by the user. The user then tunes the individual channel or channels from this broadcast transmission line carrying all signals. The Aereo antennas were not intended to be and do not function as a "community antenna." Indeed, the Aereo antennas were expressly designed not to be a "community antenna," but a co-located collection of individual antennas.



[redacted]

66. In summary, as set forth above, the Aereo system provides to a consumer a remote antenna and remote DVR by which she can access, record and view over-the-air broadcast television. As was intended in the design of the system, the signals captured, recorded and viewed by the consumer are unique (*e.g.*, subject to whatever interference or artifacts result from the individual antenna utilized by the consumer) and are individual and unique to that consumer throughout the system from antenna to viewing device.

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I declare under the penalties of perjury under the laws of the United States of America that the foregoing is true and accurate to the best of my knowledge.

Joseph Lipowski

Joseph Lipowski

Dated: May 18, 2012